

**INDO-PACIFIC FISHERY COMMISSION**

**OCCASIONAL PAPER**

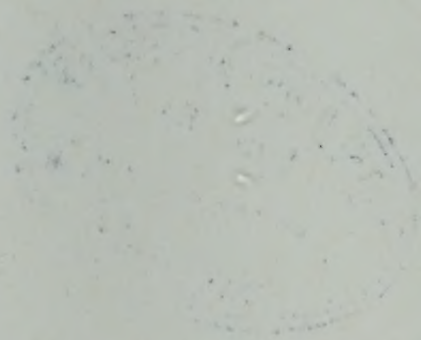
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**FISH TECHNOLOGY LIBRARY  
SERVICES IN THE IPFC REGION**



**FAO REGIONAL OFFICE FOR ASIA AND THE PACIFIC  
MALIWAN MANSION, PHRA ATTIT ROAD,  
BANGKOK, THAILAND**



FISH TECHNOLOGY LIBRARY SERVICES IN THE IPFC REGION

by

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## FOREWORD

One of the recommendations of the Fourth Meeting of the IPFC Working Party on Fish Technology and Marketing was that an in-depth assessment should be made of library and information services within the Region with a view to strengthening them. Ms Frances Barnes, formerly Librarian of the CSIRO Tasmanian Regional Laboratory, Hobart, Tasmania, undertook a visit to selected institutes in the Region and prepared this report. Because of time limitations it was not possible to visit all institutes. Selection was not based on any preconceived qualitative criteria, but the omission of India, although regrettable, was because the high standard of library services in Indian institutes is well known.

Taken as a whole, the report indicates that while library services to technologists in the Region are in need of strengthening, there are well developed facilities in some countries that could become focal points for a regional network. The reports from each country consider the situation in detail and are included here as advisory notes on how to improve the library, rather than implying criticism of the institutes referred to. It is hoped that circulation of this publication will help technologists to strengthen their libraries and provide them with ammunition to justify increased budgets from their governing bodies. A good library should be the heart of any technological institute and this should be coupled with the possibility of ready access to literature not held in the institute. In the future we look forward to all technologists having access to first-class libraries.

David James  
Technical Secretary  
IPFC Working Party on Fish Technology and Marketing

The first of the two main sections of the report deals with the general situation in the country at the time of the survey. It is a very general survey, and it is not possible to give a detailed account of the situation in each of the districts. The second section of the report deals with the results of the survey. It is a very detailed survey, and it is possible to give a detailed account of the situation in each of the districts.

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## 1. TERMS OF REFERENCE

During visits to institutes in the Asian region, the consultant will assess the library facilities available in the institutes and discuss shortcomings with the library staff using the facilities. Based on these assessments, the consultant will offer on-the-spot advice on requirements for strengthening library services, including information on material and publications available elsewhere.

On completion of visits, the consultant will prepare a comprehensive report on the experience gathered for circulation by the Technical Secretary of the IPFC Working Party on Fish Technology and Marketing.

While carrying out the above work programme, the consultant should bear in mind the overall objective to promote closer collaboration between the institutes involved.

## 2. ITINERARY

Colombo	15-21 June	Institute of Fish Technology
Singapore	21-24 June	Marine Fisheries Research Department, SEAFDEC
Malaysia	24-29 June	Malaysian Agricultural Research and Development Institute (MARDI)
Bangkok	29 June to 7 July	Fishery Technology Laboratory, Department of Fisheries  Faculty of Fisheries, Kasetsart University  Southeast Asian Fisheries Development Centre, Samutprakarn
Manila	7-18 July	Department of Fisheries Technology, College of Fisheries, University of the Philippines  Bureau of Fisheries and Aquatic Resources  Department of Food Science and Technology, University of the Philippines at Los Banos
Jakarta	18-25 July	Institute of Fishery Technology

Other institutes and libraries were visited at each location. These were considered to have similar interests, collections of importance, or were parent bodies. They are listed in the report under country, along with the institutes on the itinerary.

## 3. SUMMARY AND RECOMMENDATIONS

The former director of the Torry Research Station, Aberdeen, Dr G.H.O. Burgess, states very succinctly the needs of a fish technology laboratory. He states: "Staff must be aware of recent developments elsewhere. It is essential that every laboratory should have access to the world fisheries literature. It would be an interesting exercise, and perhaps one to be undertaken by FAO, to draw up a list of basic journals for a fish technology library. Perhaps no research should be undertaken until all available sources of information have been exhausted. The library is one of the cheapest places to carry out research. It is worth noting that new fisheries must depend almost entirely on technology borrowed from elsewhere and a new laboratory is not required to start a full programme of innovatory research".<sup>1/</sup>

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1/ Burgess, G.H.O. (1974). The contribution of fish technology to the utilization of fish resources. In Fishery products, edited by R. Kreuzer. Fishing News (Books), pp. 47-53

Matters relating to a particular institute or region are discussed in detail in the body of the report, but there were problems that were common to all institutes visited. Book selection seems to present some difficulties. There is a predominance of AVI publications in many of the libraries, whether this is because AVI agents have been supplying books on approval, or because advertisements for these publications are all that are received. However AVI is by no means the only publisher in the field of fish and food technology, and research staff and librarians should make every endeavour to acquire publishers' catalogues and book reviews from as many sources as possible before selection is made. A list of publishers' and agents' addresses was left at each of the institutes on the itinerary (see Appendix III). Wider dissemination of available book reviews may be possible through the proposed newsletter of the FAO/IPFC Working Party on Fish Technology and Marketing, and publications such as the SEAFDEC Newsletter, MNR Newsletter, and ICLARM Newsletter.

Abstracting journals were not held in all libraries. It is essential for research staff to have ready access to the abstracting journals in their fields of research. Food Science and Technology Abstracts or Aquatic Sciences and Fisheries Abstracts should be held depending on an institute's interests in post-harvest technology or fisheries. Nothing can compensate for either the current awareness facility that an abstracting journal provides, or the retrospective search capability of a full set. Alternatives are SDI services and retrospective data base searches. An SDI service using Food Science and Technology Abstracts is available from CSIRO in Australia (see Appendix I for profile example). A retrospective service on Aquatic Sciences and Fisheries and Food Science and Technology Abstracts is available through the FAO Library.

Institutes should also consider membership of the International Institute of Refrigeration. Members receive the Bulletin of the IIR and proceedings of Commission meetings, as well as a 25 percent reduction on the purchase of all documents published by the Institute, including photocopies. The Bulletin lists ongoing work of research laboratories and abstracts of published articles on all aspects of refrigeration. Supplements to the Bulletin, such as "Freezing and storage of fish, poultry and meat" (Annexe 1972 2 to the Bulletin of the International Institute of Refrigeration), can be particularly valuable.

In general book stocks were found to be fair. A list of basic books was left with the main institutes visited. This has been amended for inclusion in this report (see Appendix III). It is a very select list based on the holdings of the CSIRO Tasmanian Regional Laboratory Library and does not cover fisheries, or all aspects of fish technology. Serial holdings were poor - there were exceptions - and document availability is a major problem. A list of key journals was also left with each institute. Once again it is a select list based on the holdings of the CSIRO Tasmanian Regional Laboratory Library. This library is limited by its budget, but has the advantage of having access to the library material of a large organization, a national union list of scientific serials, and an excellent inter-library loan system. The list in Appendix IV has been amended to show actual holdings of the Tasmanian Library, and could perhaps be used for inter-library loan purposes when all local or regional sources have failed in supplying photocopies.

Series and report literature is almost non-existent in the libraries visited. Most of the relevant material can be obtained by gift, exchange, or at modest cost. See Appendix V for a list of possible sources.

Translations of important papers can be both difficult to obtain and prohibitively expensive. When translations are made of articles of interest to members of the FAO/IPFC Working Party on Fish Technology and Marketing, abstracts of these should be published in the Newsletter.

Research staff interviewed were mostly unaware of the services that they could expect from an adequately stocked, well equipped, and expertly staffed library. It is to some degree a question of demand; demand that money be spent on books, journals, equipment and staff, then expect a service; a service that will expand in direct proportion to the amount of communication and cooperation between researchers and librarians. Support, stimulation and feedback are vital ingredients for growth and excellence in any service.

#### 4. INSTITUTES AND LIBRARIES VISITED

##### 4.1 Sri Lanka

Institute of Fish Technology, Crow Island, Colombo  
Director: Dr Onil Perera (from 30 June 1980)  
Staff: 12 research staff; 42 total

The Institute is involved in most aspects of post-harvest fish technology, including handling, storage, transport and marketing, microbiology and quality control, solar drying and fish silage. It has, as yet, no published series, but as staff have contributed to the Bulletin of the Fisheries Research Station this could be used in exchange for publications of other institutes.

##### Library

A spacious, comfortable, air-conditioned and well lit room amply supplied with library furniture and equipped with photocopier and microfiche reader.

SIDA funds and a British Council presentation have been used for purchase of books and journal subscriptions. Generally these funds have been well spent, but the collection shows evidence of a blanket approach rather than selectivity. There are few general reference books, library tools or laboratory and analytical handbooks in the collection. More material is needed on statistical methods and planning of experiments, sanitation and quality control, food microbiology and identification of moulds, dehydration and water activity in foods, flavour and food evaluation, seafood plant design and seafood retailing.

The library appears to have all the relevant FAO and IPFC publications, and subscriptions have been placed for key fish technology journals, but as yet there are few useful runs of journals or abstracts. Australian Fisheries 1979 +, Journal of the Fisheries Research Board of Canada +, Fishing News International 1976 +, Journal of Food Technology 1979 +, Journal of the Science of Food and Agriculture 1979 +, and Food and Science and Technology Abstracts 1978-1979 are held. This last subscription appears to have lapsed. A complete set of FSTA is available at the Ceylon Institute of Scientific and Fish Technology (subscription), a joint Selective Dissemination of Information (SDI) profile run against FSTA tapes by the CSIRO Information Service may be an alternative. (See Appendix I for profile example.)

Librarians should note that the more recent volumes of the Journal of the Fisheries Research Board of Canada do not have the fish technology content of the early volumes.

A more active policy is needed in soliciting gifts and exchanges, and funds must be allocated for continuation of the present subscriptions. Core food science journals are held at the Ceylon Institute of Scientific and Industrial Research, and inconvenient though it may be, research staff should continue to make regular visits to the CISIR library, as well as other major Colombo libraries, to scan latest journal issues. Perhaps these libraries could be prevailed upon to provide photocopies of contents lists in exchange for contents lists of material received at IFT.

Research staff make good use of the library, but also rely on their own overseas contacts for information. Their access to material in the library would be improved if all items were fully catalogued and given subject entries. Books should be labelled on the spine for easier shelving and retrieval. Special stationery for loan, request and inter-library loan records would help in providing a self-service facility for research staff.

This library has been given a good start. It deserves full support and an experienced librarian to continue and develop the service.

Fisheries Research Station, Crow Island, Colombo  
Director: Dr De Bruin

Mr. Aloy Fernando, Divisional Secretary, Ministry of Fisheries, who is responsible for both the Institute of Fish Technology and the Fisheries Research Station, asked me to examine the library at the Fisheries Research Station, report on what I found, and advise on a possible amalgamation of the two libraries.

The book stock is in a state of considerable disrepair and disarray. It appears to be a very valuable collection. There are long runs of periodicals, serials and departmental publications of archival nature, a large number of older volumes and some recent textbooks. It would be an impossible task for one librarian to bring some degree of order, repair and usefulness back into the collection, but given adequate staff it should be attempted. Discrete buying of new books and an appraisal of journal titles would be in order.

There would be no real advantage at this stage in combining the two libraries. One is an up-to-date heavily used working collection and the other a valuable archival resource. The present space allocation of each is needed for both storage and use. Rationalization of the collections should be considered. There is some duplication, and material is held in each library that could be put to better use in the other. Consultation between the librarians before ordering books or journal subscriptions would be economically sound, and a union catalogue would be desirable. Minimum staffing, that would allow for flexibility and interchange of staff between the two libraries, would be two qualified librarians, a clerical assistant and a storeman or attendant.

#### The Library, Department of Zoology, University of Sri Lanka

This library has a collection concentrated on marine biology and ecology. Journals held include: Journal of Fish Biology and Journal of the Fisheries Research Board of Canada.

#### The Library, Medical Research Institute

The collection has a good selection of material on nutrition and bacteriology.

#### The Library, Ceylon Institute of Scientific and Industrial Research

Key food science journals are held in this library. Chemical Abstracts and Food Science and Technology Abstracts are on subscription.

#### Sri Lanka Scientific and Technical Information Centre, National Science Council of Sri Lanka

The Centre is responsible for the Union Catalogue of Science and Technology, the Union List of Serials in Science and Technology (both still on cards), the abstracting of Sri Lanka science and technology literature, and rationalization of holdings and journal subscriptions within Sri Lanka. It also acts as the clearing house for overseas requests.

#### British Council Library

A good, well used, general collection with a particularly strong reference section.

#### Conclusions

Current periodical literature concerning fish technology is reasonably provided for in Colombo libraries, but it is not always accessible to staff of the Institute of Fish Technology. Older periodical literature, with a few exceptions, and important report material, are not held. Therefore research staff will have to continue to rely on overseas colleagues for reprints. Recent report material should be acquired through gift and exchange programmes.

## 4.2 Singapore

Marine Fisheries Research Department, Southeast Asian Fisheries Development Center  
(SEAFDEC), Changi Point, Singapore  
Chief: Mr Hooi Kok Kuang  
Staff: 20 research staff; 120 total

The Department is in the process of changing its research interests from fisheries to post-harvest technology. Current programmes include the utilization of low-cost fish such as tilapia, in fish balls and fish fingers, and investigations on the gelling properties of tilapia protein.

### Publications

#### Annual Report

SEAFDEC newsletter, V. 1 - ; 1977- . Phrapradaeng, Thailand. Research papers are listed in List of SEAFDEC publications. Phrapradaeng, Thailand, SEAFDEC, 1979 (SEAFDEC/79/Inf.4).

### Library

One room, well-lit and air-conditioned, the library has adequate steel shelving, chairs, tables and library furniture. It is overcrowded and thus slightly uncomfortable. The adjacent conference room would make an ideal reading room. Equipment includes a photocopier and a Fuji Q4 minicopy reader printer fitted for 16-35 mm film. If this machine is still operational, it might be as well to inquire if it could be adapted for microfiche.

A major problem in the library has been the shortness of tenure of librarians, over whose selection the Department has no control. The catalogue is fragmented, being split under authors, titles, serials, periodicals and subject, and needs combining into just name-title and subject sequences. The collection reflects the frequent change in librarians. There are a number of very short runs of journals, a quantity of ephemeral trade-type literature and other material of doubtful value. Weeding is long overdue.

The library has a budget of Sgp.\$ 6 000-7 000 for books and periodicals. Research staff recommend purchases. There is a reasonable book stock with an emphasis on fisheries, but few general reference books or library tools.

Current periodicals include: Australian Journal of Marine and Freshwater Research, Australian Fisheries 1972 +, Journal of the Fisheries Research Board of Canada 1952 +, Fishing News International 1978 +, Food Technology in Australia 1980 +, Bulletin of the Japanese Society of Scientific Fisheries 1973 +, Journal of the Science of Food and Agriculture 1979 +, and Marine Fisheries Review 1963 +. Food Technology and Journal of Food Science are obvious omissions. All relevant FAO and IPFC publications are held, but many other series concerned with fish and food technology could be acquired by an active gifts and exchange programme.

Abstracting and indexing journals held by the library include: Aquatic Sciences and Fisheries Abstracts, Environmental Health and Pollution Control, Current Contents - Life Sciences, and Marine Science Contents Tables. The Department should have access to Food Science and Technology Abstracts, to which there are no subscriptions in Singapore. Perhaps the CSIRO SDI service could suffice, provided that the FAO data service was used for retrospective searches.

There is little material on food science in Singapore libraries prior to 1972, and research staff also reported difficulty in getting reprints from overseas. However, until the inter-library loan system for overseas material can be improved, reprints represent the surest source of information.

The Department is considering the installation of a computer for use by all sections including the library. The librarian should consult with the National Library to ensure that any systems she uses are compatible with computer systems in other libraries. If a link up with overseas data base services is possible in the future, it would be advisable to also choose a terminal that would be suitable for that purpose.

#### 4.3 Malaysia

Department of Food Science and Technology, Universiti Pertanian Malaysia (University of Agriculture), Serdang, Selangor  
Head: Ms. Asiah Zain

A teaching and research department that has no separate library. The Department's research projects include production of fish crackers, use of trash fish in fish sauce and fish floss, spiced minced fish from tilapia and processing and quality of salted dried fish. Student courses cover basic food microbiology, food biochemistry, food composition and analysis, food processing and food quality control.

Library: Universiti Pertanian Malaysia 1974 +  
Librarian: Syed Salim Agha  
Staff: 20 professional, 10 non-graduate; 125 total

This is a spacious, well equipped library serving 3 500 students and 500 academics in all faculties and departments, as well as being responsible for the Agricultural Information Bureau and the AGRIS input for Malaysia. The library is currently assessing an SDI service using the AGRIS data base.

There has been a concentrated effort to build up the serial holdings. Included in the very good collection of food science material are: Advances in Food Research 1970 +, Australian Fisheries 1975 +, CSIRO Food Research Quarterly 1960 +, Ecology of Food and Nutrition 1972 +, Fishing News International 1974 +, Food and Nutrition; Notes and Reviews 1974 +, Food Science and Technology Abstracts 1969 +, Food Technology 1961 +, Food Technology in Australia 1969 +, Journal of Agricultural and Food Chemistry 1961 +, Journal of Food Science 1959 +, Journal of Food Technology 1979 +, Journal of Food Biochemistry 1978 +, Journal of Food Safety 1979 +, Journal of the Canadian Institute of Food Science and Technology 1978 +, Journal of the Fisheries Research Board of Canada 1979 +, Marine Fisheries Review 1979 +, and Tropical Products Institute Newsletter 1974 +. This library handles a large number of inter-library loans.

Agricultural Products Division, Malaysian Agricultural Research and Development Institute (MARDI), Serdang, Selangor  
Director: Dr A. Zaharudin Idrus  
Staff: 48 research staff; 166 total (includes pilot stations)

The Division's programme covers a wide range of research and extension activities, including defence food research, coconut processing, pepper utilization and processing, manufacture of imitation dairy products, development of an infant feeding formula, technical and advisory services to small-scale food industries, production of food items from tuna cannery waste, production of fish crackers, freezing trials of various fish, and research into prawn quality.

#### Publications

Annual Report (lists other publications and research papers)

#### Library

A branch of the MARDI Central Library, it is staffed by a library clerk. The library has adequate shelving, tables, chairs and library furniture, but is overcrowded. It has no separate budget and requests for book purchases are processed by the Central Library Committee, thus making acquisitions is rather slow. The collection, which shows a general lack of order, contains most of the basic food science material in both reference books and journals.

MARDI Central Library, Serdang, Selangor

Librarian: Mrs Jariah Jais

Staff: 2 assistant librarians, 2 library clerks, 2 typists and 4 attendants

The librarian has a most demanding job, providing service to all 500 research staff. She supervises the libraries of 32 stations, of which, five regional bases are staffed by a library clerk, and the others by part-time assistants. There is no provision for library training for any of these staff.

The library is a separate building of two floors, spacious, well equipped and furnished. It has a budget of M.\$ 200 000 and there is a library committee. It has a comprehensive collection in agriculture, which includes most of the CAB abstracts, Science Citation Index and all Current Contents. The combined MARDI libraries have a fairly good coverage of food science and fish technology. An extensive exchange programme operates using the MARDI Annual Report and Research Bulletin as exchange material.

These two MARDI libraries are on the Universiti Pertanian Malaysia campus, though some distance apart, and there is collaboration and cooperation between MARDI and the university library.

MARDI Freshwater Fisheries Research Station, Melaka

A large complex involved in the culture of prawns and freshwater fish, and the integration of aquaculture and agriculture. It has a well-equipped library staffed by a library clerk, and has a large fisheries collection including Aquatic Sciences and Fisheries Abstracts, Australian Journal of Marine and Freshwater Research, Australian Fisheries, and Marine Fisheries Review.

Library, Universiti Kebangsaan Malaysia (National University of Malaysia), Bangi, Selangor

Librarian: Zainal Azam bin Ahmad

A large modern library which serves the whole university campus, it has little material as yet on food science, except Food Science and Technology abstracts. There will probably be a dramatic increase soon as a course in food science is to be offered in the Faculty of Science.

Library, Universiti Malaya, Lembah Pantai, Kuala Lumpur

Librarian: Mrs Khoo Siew Mun

The oldest university in Malaysia, the Universiti Malaya, has interests in the economics of agriculture and fisheries and in food research, but has no food science department. The library's collection includes Advances in Food Research, Vol. 1 +, Journal of Food Science 1967 +, Journal of the Science of Food and Agriculture, Vol. 1 +, Journal of Food Technology 1964 +, and Food Science and Technology Abstracts, Vol. 3 +. A very relevant publication of the library is "The fishing industry in Malaysia: a bibliography. Kuala Lumpur, The Library, University of Malaya, 1977".

The university libraries run a courier service for inter-library loans and most make use of the British Lending Library voucher system.

### Conclusions

Food science is generally well represented in collections in Malaysian libraries. There are few serial holdings earlier than 1972, except at the Universiti Malaya, and little report or foreign language material, particularly Japanese journals, on fish technology. Difficulty and cost of translations may be a factor in this. It is recognized that good serial collections are desirable and that abstracting journals are a necessity.

There is a desperate need for a non-graduate library technician grading between the professional librarian and the library clerk so that the burden on the former can be eased.

#### 4.4 Thailand

Fishery Technology Development Division, Department of Fisheries, Rajadamnern Avenue,  
Bangkok

Director: Mrs Bung-orn Saisithi

Staff: 17 research staff; 67 total

The Division's research programme covers methods of producing fermented fish from catfish, utilization of trash fish in fish floss, fish balls, minced fish, etc., fish handling and the use of ice and insulated containers, and sanitation and quality control. A service is provided to industry and interested persons. Inquiries are directed to the staff member responsible for particular lines of research.

#### Publications

Annual Report (exchanged mainly within Thailand)

#### Library

A separate room is planned in a new building. The present room has other uses and is extremely crowded. Locked bookcases, open periodical shelves and a card catalogue are squeezed in along the walls. All tables and chairs are in use. A photocopier is available.

The part-time librarian, Miss Attaya Kungsuwan, BSc, is a food technologist in the Division. Her library training was limited to a unit of her degree course, but she has the advantage of being a subject specialist. Unfortunately for the library, she is hoping to begin work on her MSc in Japan next year. Miss Attaya has no library tools to work with other than a set of modified Library of Congress classification schedules borrowed from her former lecturer in library science.

The library has no budget but money is made available for books when needed. There is little general reference material in the collection and few recent textbooks. Canning, refrigeration, sanitation and microbiology are subjects that are fairly well covered. The serials include a few FAO and IPFC publications, Advances in Food Research, Vols. 1, 2 and 9, a few issues of Fishing News International and a new subscription to Food Technology in Australia. No abstracting journals are held. More material is needed in the collection, especially serials. Even without subscriptions, a wide range of important report literature related to fish technology, can be obtained by gift or exchange.

All new material, after being passed to the library from the Director, is circulated from section to section within the Division. Staff should also have regular access to abstracting journals and/or, contents lists of key journals. The CSIRO SDI service with a profile on Food Science and Technology Abstracts could be an alternative.

Although an inter-library loan network is operational, and research staff readily help themselves in getting information from other librarians and colleagues, a qualified librarian, working full time, would be better able to exploit the material that is available and provide a service both to the Division and the public.

Southeast Asian Fisheries Development Centre (SEAFDEC), P.O. Box 4, Phrapradaeng,  
Samutprakarn

Secretary General: Dr Deb Menasveta

Information/Programme Officer: Dr K.I. Matics

Both the SEAFDEC Secretariat and the Training Department are located at Phrapradaeng. The Training Department offers a two-year course in fishing gear technology and navigation, or marine engineering and refrigeration, to trainees from member countries and others from outside the Southeast Asian region. Special short-term training courses are offered to Thai fishermen.

The Secretariat is the executive arm of SEAFDEC and is also responsible for all SEAFDEC publications.

### Publications

Annual Report

SEAFDEC Newsletter, Vol. 1 - ; 1977 -

Directory of Scientists and Technologists in the Fields of Fisheries Research, Development and Management in the Southeast Asian Region (as of 1978). Thailand, SEAFDEC, 1979

Uchiyama, Hitoshi. Analytical Methods for Estimating Freshness of Fish. Thailand, SEAFDEC Training Department, 1978

List of SEAFDEC publications. Phrapradaeng, Thailand, SEAFDEC, 1979 (SEAFDEC/79/Inf 4).

Distribution of these publications is handled by the Information Section.

### Library

The Library which provides a service to 80 full-time staff, 50 students and a further 60 short-term students at various times, is a large, airy, comfortable room, furnished with shelving, tables, chairs, card catalogue, display shelves and locked bookcases. It is equipped with a photocopier and a standard microfilm reader (not fiche). Library funding is included in the General Affairs Division budget, but extra funds for books have been sought from the Netherlands Government.

A graduate member of the staff has been acting as librarian, but she was on leave in the United States and is seeking a suitable project for her Master's Degree. She has been very active in assembling the necessary library tools and implementing library procedures. Library tools held are: Dewey Decimal Classification, 19th ed., Sears' List of Subject Headings, 11th ed., and Wynar, B., Introduction to Cataloguing and Classification, 5th ed.

The collection has adequate general reference material and textbooks on statistical method, general fisheries and aquaculture. Serials include: Australian Fisheries, Fish Farming International, Fishing News International, Sea Grant 70's, World Fishing, and Bulletin of the Tokai Regional Fisheries Research Laboratory. Aquatic Sciences and Fisheries Abstracts is held, and pamphlets and reprints are filed. Gift, exchange and reprint materials are actively sought.

Because of its isolated position, access to other libraries is limited. The Department of Fisheries assists with inter-library loans, but reprints are usually acquired from source. This library needs to be self-sufficient in basic research material and student texts. A good start has been made but the book stock could be increased considerably. User access to the collection could be made easier by dispensing with the locks on the bookcases and arranging for the library to be staffed throughout the day.

Department for Fishery Products, Faculty of Fisheries, Kasetsart University, Bangkok 9  
Head: Ms Tasanee Sorasuchart

The Department has a teaching as well as a limited research role. Production and acceptability of fish sauce made from freshwater fish is one of its research projects.

### Publications

Fishery research bulletin, Faculty of Fisheries, Kasetsart University. The Faculty is charged for copies used for exchange agreements.

### Faculty Library

Of average size, crowded but well furnished, the library is staffed by one librarian and a library clerk. It is well stocked with textbooks, with an emphasis on fisheries material. Faculty members have been very generous with their donations to the library.

Aquatic Sciences and Fisheries Abstracts is held and serials include: Bulletin of the Japanese Society of Scientific Fisheries, Journal of the Fisheries Research Board of Canada, Journal of Food Science, Journal of Food Technology, Marine Fisheries Review and National Marine Fisheries Service publications.

The Library, Kasetsart University  
Librarian: Miss Daruna Somboonkun

A spacious, extremely new library of three floors, still being equipped and furnished. Book stocks are limited at present, particularly in food science, but Food Science and Technology Abstracts, and Chemical Abstracts are held. The University has a contract with the University of California for the supply of photocopies of requested material.

Institute of Food Research and Product Development, Kasetsart University

A large production and development unit, specializing in vegetable protein products, such as, snack foods, baby food, soy and wheat flour cookies, mung protein concentrate, textured fermented fish and Kaset protein and soy milk. Field trials have been conducted with these high protein foods at child nutrition centres, and there is a continuing school lunch programme. The Institute's extension work is important and courses are held on food quality control and cottage food industries.

#### Library

A small library with locked bookcases and no air-conditioning. Food Science and Technology Abstracts, Food Technology in Australia, Food Technology in New Zealand, and IDRC publications are held. The book stock is aged. The control of the library has been taken over by the Main Library, which is some distance away. At present there is dissatisfaction with the slowness of aquisition and the lack of service. There will probably be improvement as the University Library settles into its new quarters.

Freshwater Fish Aquarium, Kasetsart University

The Aquarium both displays and carries out research on the freshwater fish of Thailand.

#### Library

The collection consists of dated book stocks and long runs of journals in the fields of fisheries and aquaculture.

Department of Chemical Technology, Faculty of Science, Chulalonghorn University

#### Library

The Department Library has basic book material on food technology, nutrition and biochemistry. Food Technology, Journal of Nutrition, and Journal of the Science of Food and Agriculture are among the periodicals held.

Marine Science Department, Chulalonghorn University

#### Library

Periodicals held in the Department library include: Journal of the Marine Biological Association of the United Kingdom, Bulletin of the Japanese Society of Scientific Fisheries, Journal of the Fisheries Research Board of Canada, Journal of Fish Biology, Oceanic Abstracts, and FAO publications.

The Library, FAO Regional Office for Asia and the Pacific, Maliwan Mansion, Phra Atit Road, Bangkok 2

This library has a good collection of fisheries material including an almost complete set of the Journal of the Fisheries Research Board of Canada, Marine Fisheries Review, Australian Fisheries, Bulletin of the Tohoku Regional Fisheries Research Laboratory, and other Japanese fisheries journals.

Division of Scientific and Technological Information, Department of Science Services,  
Rama VI Street, Bangkok 4  
Senior Librarian: Ms Tweelak Boonkong

The Division has a very impressive collection of patents and standards, as well as a large number of abstracting journals including: Analytical Abstracts, Chemical Abstracts, and Food Science and Technology Abstracts. Advances in Food Research, Vol. 1 +, is included in material on basic food science. Latest issues of journals are displayed in the reading room, and instruction sheets are provided for new users of the abstracting journals. The Division has an extensive publishing programme.

#### Conclusions

Fish technologists in Thailand are generally not getting the service they deserve. Most of the key journals are held in Bangkok libraries, and there is a Union List of serials. However, inter-library loan service is slow and not used to advantage. Book stocks are meagre or aged.

Trained librarians are needed to fully exploit the material that is available, to extend the cooperation that already exists and to set about acquiring all the relevant report literature.

#### 4.5 The Philippines

Bureau of Fisheries and Aquatic Resources (BFAR), 860 Quezon Avenue, Quezon City, Metro, Manila  
Director: Mr Felix R. Gonzales

The Bureau, which comes under the Ministry of Natural Resources, is responsible for the development, improvement, management and conservation of fishery resources. One of its objectives is to help provide financing, training, extension services, technical assistance and infrastructure, for production, storage, processing, transportation, marketing and distribution of fish and fishery products. The BFAR has 14 divisions and 13 regional offices.

#### Publications

Annual Report  
Fisheries Newsletter  
Fisheries Statistics Yearbook  
Philippine Journal of Fisheries  
Pamphlets and brochures

#### Library and Documentations Service

Head: Miss Lourdes I. de Mesa  
Staff: 3 graduates; 5 total. All the staff are on temporary appointments and none have had library training

Miss de Mesa, who has the responsibility for library services to the whole of BFAR, including the regions, plus distribution of the Bureau's publications, has no time to provide in-service training for her staff. A condition of future employment could be compulsory enrolment at a library school with time off allowed for attending lectures.

The library has cramped quarters and a large proportion of the available space is taken up by Laws and Presidential Decrees. As the library of the Ministry of Natural Resources also has a set, and should be able to provide any service concerning them, the Bureau should be able to dispense with its holding.

Most of the BFAR collection appeared to be inaccessible. There are no library tools except a borrowed set of Library of Congress classification schedules, and practically no serials concerned with fish technology. Oceanic Abstracts, and Pollution Abstracts are both on subscription, but research staff involved in post-harvest technology and fishery products should have access to Food Science and Technology Abstracts. The library has an exchange programme which should be broadened to include more fish technology material.

Technical and management staff, research staff of related agencies, the fishing industry, students and the general public, are all given a service by this library. The librarian is also currently supplying cataloguing data and abstracts to the union catalogue of the libraries under the Ministry of Natural Resources.

#### Fishermen's Training Center, Sangley Point, Cavite City

The Center which is part of the BFAR, provides training in the operation of commercial fishing boats equipped with purse seiners, trawlers and refrigeration facilities, for engineers, skippers and master fishermen. It has a very small library, which has a few fishing industry journals and a small collection of students' texts. Extension material and books on inspection and quality control would be useful additions.

#### Ministry of Natural Resources

##### Publications

Performance Report

MNR Quarterly

MNR Newsletter

Fisheries Today (a quarterly news digest published by the Fishing Industry Development Council)

Fish Marketing Review (published quarterly by the Philippines Fish Marketing Authority)

Pamphlets and brochures

##### Library

Chief Librarian: Mrs C.V. Rosal

This is a closed access library with a limited reading area, serving a large clientele. The library has a large reference collection and a wide coverage of economics, administration, land surveys, etc., but material is crowded onto shelves that are too close together for easy access.

Natural Resources Management Center

Librarian: Mrs M. Carreon

The Center which is still in its infancy, is to be responsible for the coordination and implementation of the Natural Resources Union Catalogue Programme, and a microfilming project.

Department of Fisheries Technology, College of Fisheries, University of the Philippines,  
Diliman, Quezon City

Acting Director: Dr Florian Magno Orejano

The Department has a teaching as well as a research role in fish processing. Research staff rely on reprints and their own alumni collection of food technology books.

The College Librarian, Ms A. Balane, has assistance from students in the running of her small library, which is funded from student fees. The predominantly fisheries collection has a moderate number of reference and textbooks. Journals include Aquatic Sciences and Fisheries Abstracts, Australian Fisheries, Australian Journal of Marine and Freshwater Research, Journal of the Fisheries Research Board of Canada, Bulletin of the Japanese Society of Scientific Fisheries, Marine Fisheries Review, and the Bulletin of the Tokai Regional Fisheries Research Laboratory. Food science journals are held in the College of Home Economics Library.

Department of Food Science and Technology, University of the Philippines at Los Banos,  
College, Laguna  
Chairman: Dr E.C. Sison

The Department is concerned with aspects of food science and technology. Studies on the smoke curing of Bangus, improvement of traditional methods of fish processing, and processing of fish sausage from surgeon fish are current fish technology projects. There are no departmental libraries at Los Banos and the research staff of the Department rely on a small laboratory collection, their own journal subscriptions and reprints.

The campus spreads over a wide area and the University Library is some distance from the Department. The library has a good collection in agriculture and related subjects. Advances in Food Research, Journal of the Association of Official Analytical Chemists, Journal of Food Science, Food Technology, Journal of the Science of Food and Agriculture, and Bulletin of the Tokai Regional Fisheries Research Laboratory, are all in the library collection. Abstracts held include: Food Science and Technology Abstracts, Chemical Abstracts and Biological Abstracts.

South China Sea Fisheries Development and Coordinating Programme, Don Tim Building,  
5468 South Superhighway, Makati, Metro, Manila  
Programme Leader: Mr A.G. Woodland

The programme has been developed to assist in promoting the coordination and cooperation of the individual countries in the study, evaluation, conservation and rational utilization of resources in the region.

#### Publications

Working Papers  
Coordinating Committee Reports  
Workshop Reports  
SCS Manuals  
Periodic Progress Reports  
Fisheries Technical Papers  
Technical Reports contributed to symposia/meetings, etc.

#### Library

The library collection and arrangement is based on the FAO Fisheries Library, with geographic subdivisions as a feature. It has all relevant FAO publications, Australian Fisheries, Journal of the Fisheries Research Board of Canada, Fishing News International, New Zealand Journal of Marine and Freshwater Research, Marine Fisheries Review, Torry Advisory Notes, Torry Research Station Annual Reports, and Codex Alimentarius publications. There are good holdings of report literature from the South Pacific Commission, SEAFDEC, Asian Development Bank, International Council for Exploration of the Sea, and other international bodies. Aquatic Sciences and Fisheries Abstracts, and Marine Science Contents Tables are held. All material is circulated to research staff.

The library which is used by other organizations and students, will be transferred to the Bureau of Fisheries and Aquatic Resources at the completion of the Programme. It will be a valuable addition to the BFAR library.

International Center for Living Aquatic Resources Management (ICLARM) MCC, P.O. Box 1501,  
Makati, Metro, Manila  
Director General: Dr Ziad Shehadeh

ICLARM is an international non-profit research centre which has been organized to conduct, stimulate and accelerate research in all aspects of fisheries and aquatic resources. The Center has a core of 12 expert scientific staff, additional consultants, and information services and publishing section.

#### Publications

ICLARM Newsletter  
ICLARM Studies and Reviews  
ICLARM Reports  
ICLARM Information  
ICLARM Conference Proceedings  
ICLARM Bibliographies  
ICLARM Translations  
ICLARM Technical Reports

#### Library

Librarian, Mrs Linda Temprosa, has two qualified staff to assist in her up-to-date, spacious and well-equipped library. It is still very new, has no back sets of journals, but has an active exchange and gift programme. Aquatic Sciences and Fisheries Abstracts, Aquaculture, Australian Fisheries, Australian Journal of Marine and Freshwater Research, Californian Fish and Game, CSIRO Division of Fisheries and Oceanography Annual Report, Fishing News International, Journal of Fish Biology, Journal of the Marine Biological Association of the UK, Marine Fisheries Review, New Zealand Fishing Industry Board Bulletin, Sea Grant 70's SEAFDEC publications, Tasmanian Fisheries Research, and Bulletin of the Tohoku Regional Fisheries Research Laboratory, are some of the serials filed in the library.

Scientific Library and Documentation Division, National Science Development Board,  
Bicutan, Taguig, Metro, Manila  
Chief: Dr Irene Amores

The Division has a good collection of scientific reference material and tools. Retrospective bibliographies are compiled on request. Photocopying and microfilming of library reference material is done at cost, and a Selective Dissemination of Information service is available.

#### Publications

Interscience  
NSDB Technology Journal  
Philippine Abstracts  
Philippine Science Index  
Philippine Men of Science  
Science Review  
Series of Philippine Scientific Bibliographies  
Philippine Journal of Science

#### Conclusions

Most of the journal literature needed for fisheries and fish technology research is held in Manila libraries, but book stocks are low.

Lack of organization, coordination and cooperation is limiting library service. Bodies such as BFAR, South China Sea Fisheries Development and Coordinating Programme, the College of Fisheries, Ministry of Natural Resources, and ICLARM, should be ensuring that their librarians are consulting and cooperating fully with each other.

#### 4.6 Indonesia

Lembaga Penelitian Teknologi Perikanan (Research Institute of Fishery Technology),  
Jalan Karel S. Tubun, Pos Palmerah, Jakarta, P.O. Box 30, Palmerah  
Director: Mr Sofyan Ilyas  
Staff: 40 research and technical staff; 66 total

The Institute's research projects include investigations into storage life, handling and distribution of fish, traditional and modern processing methods, and utilization of low cost fish, freshwater fish and fish waste.

##### Publications

Annual report  
Journal

##### Library

Of reasonable size, but used by the Information Officer and as a lecture room, the library is overcrowded with tables and chairs. Seven locked bookcases line the walls. It has never been properly organized, various members of the staff having acted as librarians in a part-time capacity. There is no catalogue and the small collection is not classified. Loans are recorded in a book in date order and much time is wasted in checking off returned loans and overdue loans. Time is also wasted in locking and unlocking bookcases.

There are no general reference books, except dictionaries, in the collection, no library tools, except the abridged English edition of UDC, and no abstracting journals. Subject coverage in the textbooks is fair, with microbiology and food canning being reasonably represented. Australian Fisheries, and Food Technology, are among the few journals of any consequence.

##### British Council Library

This library can supply limited assistance in the way of in-service training, book presentations, and British Lending Library coupons, to other libraries.

Pusat Dokumentasi Ilmiah Nasional (National Scientific Documentation Centre), PDIN, Jalan Jindral Gatot, Subroto, Jakarta  
Director: Ms Luwarsih Pringgoadisurjo

A most important source of scientific literature, the Centre has a union list for all libraries under the control of the Indonesian Institute of Sciences. All journals are displayed for 2-3 weeks before they are sent to the retaining libraries, and contents lists of journals can be obtained on a regular basis at minimal cost. Abstracts held by the library include: Biological Abstracts, Chemical Abstracts, and Dissertation Abstracts.

Bibliotheca Bogoriensis (Central Library for Biological Science and Agriculture), Jalan Ir. Haji Juanda, Bogor  
Director: Dr Prabowo Tjitropranoto

One of the larger and older libraries in Indonesia, the Bibliotheca Bogoriensis has a wealth of material on biology and agriculture. It provides an information service to researchers and has commenced an SDI service. An in-service training course is provided for librarians, and special courses are run for librarians from within the Ministry of Agriculture system. Copies of contents lists are also distributed at minimal cost.

##### Publications

Indeks Biologi dan Pertanian  
Indeks Berita Surat Kabar mengenai Biologi dan Pertanian

The Library, BIOTROP, SEAMEO Regional Centre for Tropical Biology, Jalan Raya Tajur,  
P.O. Box 17, Bogor  
Librarian: Mrs P. Sahertian-Bakhoven

The library has few items of interest to fish technologists, but the librarian is willing to give all the help she can in obtaining material from overseas to the librarian from the Research Institute of Fish Technology.

APPENDIX I

SDI Profile Example

\*ROITSRLOI                      FS                      G6T                      FB

\*N    MR C FISH  
      DOVER. TAS.

\*D    POST-HARVEST FISH TECHNOLOGY

\*M    100

\*T    0

\*L                      FS                      NOT                      H J K L M N P Q S

\*FISH\*

SEA-FOOD\*

CRUSTACEA\*

MOLLUS\*

PRAWN\*

SHRIMP\*

COD

HAKE

HERRING

MACKEREL\*

SALMON

TROUT\*

TUNA\*

SEAWEED\*

CRAB\*

PFC

\*PF

ANALY\*

BACTER\*

MICROBIOL\*

MICROORG\*

ELECTROPHOR\*  
TOXI\*  
CANN\*  
PRESERV\*  
STORAGE  
REFRIG\*  
FREEZ\*  
FROZEN  
FERMENT\*  
SMOK\*  
DRIED  
DRYING  
COMMINUT\*  
PACK\*  
PROCESS\*  
QUALITY  
SPOIL\*  
ORGANOLEPTIC  
BRIN\*  
MARKET\*  
HYGIEN\*  
ICE\*  
NUTRI\*  
LIPID\*  
METALS  
NUTRI\*

\*E

\*Z

APPENDIX II

List of Publishers and Agents

Publishers

Academic Press  
111 Fifth Avenue  
New York, N.Y. 10003, USA

India Book House  
29 Wodehouse Road  
Bombay 1, India

Mr Felicito Q. Abiva  
Felta Book Sales Company  
PO Box 482  
Greenhills Post Office  
Greenhills, Rizal 3113  
The Philippines

MacMillan Southeast Asia Pty. Ltd.  
41 Jalan Pemimpin, 2nd Floor  
Singapore 20

Applied Science Publishers

Applied Science Publishers  
Ripple Road  
Barking, Essex  
England

Applied Publishers Private Ltd.  
150-B/6 Mount Road  
Madras 600002, India

Allied Publishers Private Ltd.  
13/14 Asaf Ali Road  
New Delhi 110002, India

Parry's Book Centre  
25 Lobby Arcade  
K.L. Hilton  
Jalan Treacher  
Kuala Lumpur, Malaysia

AVI Publishing Co.

Feffer and Simmons, Inc.  
100 Park Avenue  
New York, N.Y. 10017, USA

Mr R.V. Gopal  
17 Big Street  
Madras 5, India

Mr Lito Garcia  
Feffer and Simons Inc. U.P.  
PO Box 38  
Diliman, Queson City D505  
The Philippines

Australian Government Publishing Service

Australian Government Publishing Service  
PO Box 84  
Canberra A.C.T. 2600, Australia

Blackwell

Blackwell Scientific Publications Ltd.  
8 John Street  
London, England

Eastern Book Service Ltd.  
11 Irving Place  
Singapore 13

CRC Press

CRC Press, Inc.  
200 N.W. 24th Street  
Boca Raton Florida 33431  
USA

Elsevier

Elsevier Science Publishers  
Associated Scientific Publishers  
PO Box 211, 1000  
AE Amsterdam  
The Netherlands

Fishing News (Books)

Fishing News (Books) Ltd.  
1 Long Garden Walk  
Farnham, Surrey  
England

Food and Agriculture Organization of the United Nations

FAO  
Via delle Terme di Caracalla  
00100 Rome  
Italy

Food Trade Press

Book Department  
Food Trade Press Ltd.  
7 Garrick Street  
London, WC2E 9 AT  
England

International Institute of Refrigeration

The International Institute of Refrigeration  
177 Boulevard Malesherbes  
75017 Paris  
France

McGraw-Hill

McGraw-Hill International Book Co.  
1221 Avenue of the Americas  
New York, N.Y. 10020  
USA

McGraw-Hill Book Co.  
PO Box 1590  
Manila  
The Philippines

McGraw-Hill International Book Co.  
Jalan Boon Lay  
Jurong  
Singapore

Tata-McGraw-Hill Publishing Co.  
12/4 Asaf Ali Road  
New Delhi  
India

MacMillan

The MacMillan Company of India Ltd.  
4 Community Centre  
Naraina Industrial Area  
Phase-1, New Delhi 110 028  
India

MacMillan Southeast Asia Pty. Ltd.  
41 Jalan Pemimpin (2nd Floor)  
Singapore 20

OECD

Organisation for Economic Co-operation  
and Development  
2 Rue Andre-Pascal  
75775 Paris Cedex 16  
France

R.M. Garcia Publishing House  
PO Box 1860  
Manila  
The Philippines

Pergamon

Pergamon Press  
Fairview Park  
Elmsford, New York, 10523  
USA

Plenum

Plenum Publishing Corporation  
227 West 17th Street  
New York 255-0713  
USA

India Book House  
Rusi Mansion  
29 Wodehouse Road  
Bombay 1  
India

Springer-Verlag

Springer-Verlag  
Heidelberger Platz 3  
D-1000 Berlin 33

Toppan Company (S) Pte Ltd.  
No. 38 Liu Fang Road  
Box 22 Jurong Town Post Office  
Jurong  
Singapore 22

N.K. Mehra  
B 236 A Greater Kailash-1  
New Delhi 110048  
India

Wiley

John Wiley and Sons Inc.  
605 Third Avenue  
New York, N.Y. 10016  
USA

John K.S. Lee and Lum Tim Leng  
John Wiley and Sons Inc.  
Suite 3202 Shaw Towers  
No. 100 Beach Road  
Singapore 0718

### APPENDIX III

#### Basic Book List

##### Reference Books

- World almanac and book of facts. World Almanac, 1979. \$3.95. Annual
- World of learning. International Publishing Service, 1978-79. 2 vols. \$73.50. Annual
- ✓ FAO Fisheries Department list of publications and documents 1948-78. Rome, FAO, 1979.  
(FAO Fisheries Circular No. 100, rev.3). Irregular
- ✓ Selected publications on the technology of fish utilization and marketing, compiled by the  
Fish Production and Marketing, Research Information Unit and Fisheries Branch Library.  
Rome, FAO, 1977. (FAO Fisheries Circular No. 136, rev.1)
- FAO. Worldwide list of food technology institutions. 3rd ed. Rome 1971
- International directory of fish technology institutes, prepared by Fish Production and  
Marketing Services, Fishery Industries Division, FAO. Rome 1976
- Fisheries directory of the South Pacific region  
No. 1 - ; 1979  
Noumea, South Pacific Commission
- Merck. index. 9th ed. Rahway, N.J., Merck and Co., 1976. \$18.00
- Handbook of chemistry and physics. 60th ed. Cleveland, Ohio, CRC Press, 1979. \$57.95
- Chemical engineers' handbook, edited by Robert H. Perry et al., 5th ed. New York, McGraw-  
Hill. \$48.50
- Data for biochemical research, edited by R.M.C. Dawson et al., 2nd ed. Oxford, Clarendon  
Press, 1969. \$21.50

##### Government directories

##### Dictionaries

##### University calendars and handbooks

Times concise atlas of the world. 6th rev. ed. London, Times Books, 1980. \$25.00

##### Regional atlases and maps

##### Library Tools

- Anglo-American cataloguing rules. 2nd ed. Edited by Michael Gorman and Paul W. Winkle.  
London, The Library Association, 1978. \$25.00
- Handbook of special librarianship and information work. 4th ed. Edited by W.E. Batten.  
London, Aslib, 1975
- Classification schedule of own choice
- Subject heading list to suit
- Bibliographic guide for editors. Washington, D.C., American Chemical Society, 1974
- Publishers' catalogues

### General Textbooks

- Segel, I.H. Biochemical calculations: how to solve mathematical problems in general biochemistry. 2nd ed. N.Y., Wiley 1976. \$8.95
- Cox, David R. Planning of experiments. New York, John Wiley, 1958. \$14.25
- Statistics and experimental design, by G.M. Clarke, edited by E.J. Barrington and A.J. Willis. Baltimore, Univ. Park, 1970. \$9.00
- Steel, Robert G. Principles and procedures of statistics: with special reference to the biological sciences, by R.G. Steel and James H. Torrie. New York, McGraw-Hill, 1960. \$19.00
- Cherim, Stanley M. Chemistry for laboratory technicians. Philadelphia, W.B. Saunders, 1971. \$14.50
- Association of Official Analytical Chemists. Official methods of analysis, edited by William Horwitz. 13th ed. Washington, D.C., AOAC, 1980. \$78.00
- Statistical manual of the Association of Official Analytical Chemists. Washington, D.C., AOAC, 1975. \$5.00
- Day, R.A. Quantitative analysis, by R.A. Day and A.L. Underwood. 3rd ed. Englewood Cliffs, N.J., Prentice-Hall, 1974. \$16.95
- Laboratory Manual. \$6.95
- Vogel's textbook of quantitative inorganic analysis: including elementary instrumental analysis. 4th ed. Revised by J. Bassett, et al., London, Longman, 1978. \$15.00
- Vogel's textbook of practical organic chemistry. 4th ed. Edited by B.S. Furniss, et al., London, Longman, 1978. \$39.50
- Moore, James Alexander. Experimental methods in organic chemistry. 2nd ed. Philadelphia, W.B. Saunders, 1976. \$13.50
- White, Abraham. Principles of biochemistry. New York, McGraw-Hill, 1973. \$29.00
- Hoar, W.S. General and comparative physiology. 2nd ed. Englewood Cliffs, N.J., Prentice-Hall, 1975. \$21.00
- Laboratory companion. \$7.95

- Barnes, Robert D. Invertebrate zoology. 3rd ed. Philadelphia, W.B. Saunders, 1974. \$15.95
- Ferguson, W.R. Practical laboratory planning. London, Applied Science Publishers, 1973
- O'Connor, Maeve. Writing scientific papers in English: an ELSE-Ciba Foundation guide for authors. Amsterdam, Elsevier, Excerpta Medica, North-Holland, 1975. \$12.75

### Fish and Food technology textbooks

- Grant, E.M. Guide to fishes. 4th ed. Brisbane, Dept. Harbours and Marine, 1978. \$17.00
- Commercial fish of Australia, edited by Peter Pownall. Canberra, Australian Government Publishing Service, 1977. \$A4.50
- Fishes of Indian Ocean, by Kenichero Kyushin and others. Japan Marine Fishery Resources Research Center

- Lindberg, G.U. Fishes of the world: a key to families and a checklist. Translated from the Russian by Hilary Hardin. New York, Halstead Press
- Munro, Ian S.R. The fishes of New Guinea. Port Moresby, Dept. Agriculture, Stock and Fisheries, 1967. \$20.00
- Munro, Ian S.R. The marine and fresh water fishes of Ceylon. Dept. External Affairs, 1955
- Nelson, Joseph S. Fishes of the world. New York, John Wiley, 1976. \$25.75
- Pakistan. Ministry of Food and Agriculture. Central Fisheries Department. Marine fishes of Karachi and the coasts of Sind and Makran. Karachi, Govt. Pr., 1955
- Scott, Trevor D. The marine and freshwater fishes of South Australia. 2nd ed. Adelaide Sth. Aust., Govt. Printer, 1974. \$A9.47. (Handbook of the Flora and Fauna of South Australia)
- Love, R. Malcolm. The chemical biology of fishes. New York, Academic, 1970. \$32.75. (New edition soon)
- The encyclopedia of marine resources, edited by Frank E. Firth. New York, Van Nostrand Reinhold Company, 1969. \$28.50
- Trilingual dictionary of fisheries technological terms - curing. Rome, FAO, 1972
- Multilingual dictionary of fish and fish products, edited by OECD. New York, International Publications, 1973. \$19.50
- Pownall, Peter. Fisheries of Australia. Farnham, Surrey, Fishing News (Books), 1979. £4.65
- The fishing industry in Malaysia: a bibliography. Kuala Lumpur, Univ. Malaya, 1977
- Kreuzer, Rudolf. Shark utilization and marketing, by Rudolf Kreuzer and Rashid Admed. Rome, FAO, 1978
- Bender, Arnold E. Dictionary of nutrition and food technology. London, Butterworths, 1975. \$15.00
- Food microscopy, edited by J.G. Vaughan. London, Academic, 1979. \$A68.18
- Amerine, M.A. Principles of sensory evaluation of food, by Maynard A. Amerine, et al., New York, Academic, 1965. \$29.75
- Flavour quality: objective measurement, edited by Richard A. Scanlan. Washington D.C., American Chemical Society, 1977. (ACS Symposium Series, No. 51). \$14.50
- Hawkesbury Agricultural College. School for Food Science. Manual for sensory evaluation of food, 1978
- Lipids as a source of flavour, edited by Michael K. Supran. Washington, D.C., American Chemical Society, 1978. (ACS Symposium Series, No. 75). \$17.50
- Objective methods for food evaluation: proceedings of a symposium, Boston Marriot, Newton, Mass., 1974. Washington D.C., National Academy of Science, 1976. \$8.75
- Food composition tables for use in East Asia, a research project sponsored by the US Department of Health, Education and Welfare and Food and Agriculture Organization of the United Nations, Food Policy and Nutrition Division. Washington 1972. (Can be obtained by writing to: National Institute of Arthritis, Metabolism and Digestive Diseases, National Institutes of Health, Education and Welfare, Bethesda, Maryland 20014, USA)

- McCance and Widdowson's the composition of foods. 4th revised and extended edition of MRC Special Report No. 297, by A.A. Paul and D.A.T. Southgate, London, HMSO, 1978. \$60.60
- Underwood, E.J. Trace elements in human and animal nutrition. 4th ed. N.Y., Academic, 1977. \$32.50
- Evaluation of novel protein products, edited by E. Bender, et al., Oxford, Pergamon, 1970. (Wenner-Gren Center International Symposium Series, V. 14). \$35.25
- Borgstrom, Georg. Principles of food science. Vols. 1 and 2. London, MacMillan, 1968. V.1 Food Technology. V.2 Food microbiology and biochemistry
- Applied food service sanitation. 2nd ed. Lexington, Ill., D.C. Heath and Company, 1978. \$12.95
- Christie, A.B. Food hygiene and food hazards: for all who handle food. 2nd ed. London, Faber, 1977. £2.50
- Frazier, W.C. Food microbiology. 3rd ed. N.Y., McGraw-Hill, 1978. \$18.00
- Herschdoerfer, S.M. Quality control in the food industry. N.Y., Academic V.1, 1967 - \$22.50; V.2, 1968 - \$23.85; V.3, 1972 - \$28.75
- Kramer, A. Quality control for the food industry. Westport, Conn., Avi., V.1 Fundamentals, 1970. \$22.00. V.2 Applications, 1973. \$29.00
- ✓ Abstracts of methods used to assess fish quality, by Sudip Jhaveri, et al., Narragansett, Univ. of Rhode Island, 1978. (University of Rhode Island Marine Technical Report, 69). \$5.65
- Advances in fish science and technology; papers presented at the Jubilee Conference of the Torry Research Station, Aberdeen, Scotland. 23-27 July, 1979. Edited by J.J. Connell. Farnham, Surrey, Fishing News (Books), 1980. £39.50
- Connell, J.J. Control of fish quality. 2nd ed. Fishing News (Books). £8.50
- FAO technical conference on fish inspection and quality control, edited by Rudolf Kreuzer. London, Fishing News (Books), 1971. £15.50
- ✓ Microbial safety of fishery products, edited by C.O. Chichester and H.D. Graham. N.Y., Academic, 1973
- ✓ Sumner, John. Fish quality. Canterbury, Dept. of Microbiology, Lincoln College, 1975
- Wood, P.C. Guide to shellfish hygiene. Geneva, World Health Organization, 1976. (WHO offset publication, No. 31). \$A4.00
- Food products formulary. V.1. Meats, fish, shellfish, by Stephen L. Komarik, Donald K. Tressler and Lucy Long. Westport, Conn., Avi. 1974. \$44.00
- Hersom, A.C. Canned foods: an introduction to their microbiology. 6th ed. London, J. & A. Churchill, 1969
- Lopez, Anthony. A complete course in canning. 9th ed. Baltimore, Md., The Canning Trade, 1969. \$28.00
- Kwon, Tai-wan. Fermented foods in Korea: annotated bibliography (1917-71). Seoul, Korea Institute of Science and Technology, 1972

- Food dehydration, edited by Wallace B. Van Arsdel, et al., Westport, Conn., Avi, 1973. V.1 Drying methods and phenomena. \$29.00. V.2 Practices and applications. \$36.00
- Lewin, Sherry. Displacement of water and its control of biochemical reaction. N.Y., Academic, 1978. \$19.50
- Troller, John A. Water activity and food, by John A. Troller and J.H.B. Christian. N.Y., Academic, 1978. \$19.50
- Symposium on intermediate moisture foods, edited by R. Davies, G.G. Birch and K.J. Parker. London, Applied Science Publishers, 1976. \$35.00
- Water relations of food: processing of an International Symposium held at Glasgow, 1974, edited by R.B. Duckworth. N.Y., Academic, 1975. \$45.25
- Low temperature preservation of foods and living matter, by Owen R. Fenneman, William D. Powrie and Elmer H. Marth. N.Y., Marcel Dekker, 1973. \$36.25
- Quality and stability of frozen foods: time temperature tolerance and its significance edited by Wallace B. Van Arsdel, et al., N.Y., Wiley-Interscience, 1969
- Tressler, Donald K. Freezing preservation of foods. 4th ed. Westport, Conn., Avi., 1968. V.1 Principles of refrigeration. \$23.00. V.2 Factors affecting quality. \$23.00. V.3 Commercial freezing operations: fresh foods. \$23.00. V.4 Freezing of precooked and prepared foods. \$27.00
- Borgstrom, Georg. Fish as food. N.Y., Academic, V.1 1961. \$54.00. V.2 1962. \$51.25. V.3 1965. \$43.50. V.4 1965. \$43.50
- Fish in nutrition, edited by E. Heen and R. Kreuzer. London, Fishing News (Books), 1962
- Fish protein concentrate: panacea for protein malnutrition ?, by Ernst R. Pariser, et al., Cambridge, Mass., M.I.T. press, 1978. \$17.50
- ASEAN-Australia Appraisal Mission on the Handling of Livestock, Livestock Products and Fish. Report. Singapore, Asian-Australian Economic Co-operation Program, 1977
- Brown, R. Seafood plant design: some planning considerations for the small processor, by Rick Brown with Rober Palmateer. Seattle, Univ. of Washington, 1976. (Univ. Washington, Washington Sea Grant Program. Washington Sea Grant Publication, WSG 76-2)
- Buisson, D.H. Fish processing in New Zealand: current and potential processing operations. Petone, N.Z., DSIR, 1978
- Conference on the handling, processing and marketing of tropical fish, London, 1976. Proceedings. London, Tropical Products Institute, 1977
- FAO technical conference on fishery products, Tokyo, 1973. Fishery products, edited by R. Kreuzer. Fishing News (Books), 1974. £19.75
- FAO technical conference on the freezing and irradiation of fish, Madrid, 1967. Freezing and irradiation of fish, edited by Rudolf Kreuzer. Fishing News (Books), 1968. £15.00
- Fish handling and processing, edited by G.H.O. Burgess and others. Edinburgh, HMSO, 1965: N.Y., Chemical Publishing, 1967. \$18.00
- Fishery Products of Taiwan, edited by G. Jan-Lung Chuang, et al., Tapei, Taiwan, 1977. (Joint Commission on Rural Reconstruction, JCRR fisheries series, 25B)

- Gillies, M.T. Fish and shellfish processing. Park Ridge, N.J., Noyes Data Corporation, 1975. \$36.00
- Mead, John T. Marine refrigeration and fish preservation. Birmingham, Mich., Business News Publishing Co., 1973. \$17.50
- Merritt, J.H. Refrigeration on fishing vessels. 2nd ed. Fishing News (Books), 1978. £7.00
- Packages and packaging materials for fish. Paris, Organization for Economic Co-operation and Development, 1970. F13.00
- Seafood handling, preservation, marketing: proceedings of a technical conference, 1978. Seattle, Univ. Washington, 1978. (Univ. of Washington, Washington Sea Grant Program. Washington Sea Grant Publication, WSG-No78-2). \$4.85
- Stansby, M.E. Fish oils; their chemistry, technology, stability, nutritional properties, and uses. Westport, Conn., Avi., 1967
- Stansby, M.E. Industrial fishery technology. Rev. ed. N.Y., Krieger, 1976. Reprint of 1963 edition. \$20.00
- Tanikawa, Eiichi. Marine products in Japan: size, technology and research. Tokyo, Koseisha-Kiseikaku Co., 1971. \$17.50
- Technical consultation on the Latin American hake industry, Montevideo, 1977, Supplement 1 to the report; selected papers presented at the consultation. Rome, FAO, 1978
- Tropical and subtropical fisheries technological conference, 1st, Corpus Christi, Texas A & M University Sea Grant College, 1976. (TAMU-SG-77-104)
- Fortner, Heather J. The limu eater: a cookbook of Hawaiian seaweed. Honolulu, Hawaii Univ. Sea Grant College Program, 1978
- Technology of fish utilization, edited by Rudolf Kreuzer. (FAO Symposium on the significance of fundamental research in the utilization of fish, Husum, 1964). London Fishing News (Books), 1965
- New Zealand. Fishing Industry Board. Report on quality in fish products seminar, 1971. (Fishing Industry Board, Box 9232, Wellington, N.Z.)

For those libraries with almost no journal holdings, the following books are regarded as essential.

- Advances in fish science and technology; papers presented at the Jubilee Conference of the Torry Research Station, Aberdeen, Scotland. 23-27 July 1979. Edited by J.J. Connell. Farnham, Surrey, Fishing News (Books), 1980. £39.50
- FAO technical conference on fish inspection and quality control, edited by Rudolf Kreuzer. London Fishing News (Books), 1971. £15.50
- Conference on the handling, processing and marketing of tropical fish, London 1976. Proceedings. London, Tropical Products Institute, 1977
- FAO technical conference on fishery products, Tokyo, 1973. Fishery products, edited by R. Kreuzer. Fishing News (Books), 1974. £19.75
- FAO technical conference on the freezing and irradiation of fish, Madrid, 1967. Freezing and irradiation of fish, edited by Rudolf Kreuzer. Fishing News (Books), 1968. £15.00
- Technology of fish utilization, edited by Rudolf Kreuzer. (FAO symposium on the significance of fundamental research in the utilization of fish, Husum, 1964). London Fishing News (Books), 1965

APPENDIX IV

Fish technology serials list showing holdings of the  
Tasmanian Regional Laboratory Library

- Advances in food research, V.13 - ; 1964 -  
N.Y. Academic. Annual \$35.00
- Association of Official Analytical Chemists. Journal, V.37 - ; 1954 -  
Arlington, VA. Bimonthly \$50.00
- Australia. Department of Primary Industry, Fisheries Division, Fisheries Report, No. 1 - ;  
1967 - Canberra, AGPS for Fisheries Division. Irregular
- Australian fisheries, V.1 - ; 1941 -  
Canberra, AGPS for Fisheries Division. Monthly \$18.00
- Australian fisheries paper, No. 1 - ; 1966 -  
Canberra, AGPS for Fisheries Division. Irregular
- British Food Manufacturing Industries Association.  
Various publications. (Selected issues only held at Tas. Reg. Lab.) Randalls Road,  
Leatherhead, Surrey
- CRC critical reviews in food science and nutrition, V.1 - ; 1970 -  
Boca Raton, Florida, CRC Press. Quarterly \$70.00
- CSIRO Division of Food Research.  
Report of research 1955/56 - Melbourne, CSIRO
- CSIRO food research quarterly, V.1 - ; 1941 -
- CSIRO Tasmanian Regional Laboratory.  
Occasional papers.  
Hobart, Tasmania
- Chemistry and industry, 1968 -  
London, Society of Chemical Industry. Biweekly £65.00
- California. Department of Fish and Game.  
Fish bulletin. (Selected issues only held at Tas. Reg. Lab.)  
Long Beach, California
- Canada. Fisheries Research Board  
Bulletin (Selected issues only held at Tas. Reg. Lab.)  
  
Journal, V.20 - ; 1963 -  
Ottawa, Canada. Monthly \$48.00
- Fishing Industry Research Institute, Cape Town.  
Annual report 3rd - ; 1949 -  
Private Bag, Rondebosch, Cape Province
- Fishing news international, V.7 - ; 1968 -  
London, Arthur J. Heighway Publications. Monthly £12.00
- Food and Agriculture Organization of the United Nations.  
Various publications. (Selected issues only held at Tas. Reg. Lab.) Rome, FAO

- Food and Nutrition: notes and reviews, V.32 - ; 1975 -  
Canberra, AGPS for the Australian Department of Health. Quarterly \$6.00
- Food chemistry, V.1 - ; 1976 -  
Barking, Essex, Applied Science Publishers. Quarterly £45.00
- Food technology, V.5 - ; 1951 -  
Chicago, Institute of Food Technologists. Monthly \$45.00, membership
- Food technology in Australia, V.1 - ; 1949 -  
Council of Australian Food Technology Associations. Monthly \$A30.00
- Great Britain. Food Investigation Board.  
Food investigation, 1919-57  
Leaflet, 3, 10, 11, 14; 1935-53  
Memoirs, No. 207-1223; 1932-59 (imperfect)  
Miscellaneous paper, No. 18/51 - 1/59; 1951-59 (imperfect)  
Special report, No. 5-69; 1924-59 (imperfect)
- Hawkesbury Agricultural College. School of Food Sciences.  
School for seafood processors and other publications.  
Richmond, N.S.W. Hawkesbury Agricultural College
- Indo-Pacific Fisheries Council  
Proceedings of meetings, 1st - ; 1949 -  
Bangkok, IPFC Secretariat
- International Institute of Refrigeration  
Bulletin, V.32 - ; 1952 -  
Paris, France. Bimonthly FF180  
Annexes to the Bulletin. (Selected issues held at Tas. Reg. Lab.)  
(Listed in the above Bulletin)  
International journal of refrigeration, V.1 - ; 1978 -  
Guildford, IPC Science and Technology Press
- Japanese Society for Scientific Fisheries. Bulletin, V.34 - ; 1968 -  
Tokyo. Monthly \$167.75, membership
- Journal of Food Science, V.40 - ; 1975 -  
Chicago, Institute of Food Technologists. Bimonthly \$50.00
- Journal of food technology, V.1 - ; 1966 -  
Osney Mead, Oxford, Blackwell Scientific for Institute of Food Science and Technology,  
UK. Bimonthly £48.00
- Journal of the science of food and agriculture, V.1 - ; 1953 -  
London, Society of Chemical Industry. Monthly £70.00
- Marine fisheries review, V.9 - ; 1947 -  
Seattle, National Marine Fisheries Service. Monthly \$15.00
- New Zealand. Fishing Industry Board. Bulletin, No.35 - ; 1975 -  
Wellington, N.Z. Quarterly
- Norway. Directorate of Fisheries.  
Various publications. (Selected issues only held at Tas. Reg. Lab.) Bergen, Norway

- Sea grant 70's, V.4 - ; 1974 -  
Blackburg, Virginia, Virginia Polytechnic Institute and State University. Monthly free
- SEAFDEC newsletter, V.1 - ; 1977 -  
Phraapradaeng, Thailand. Quarterly
- South China Sea Fisheries Development and Coordinating Programme  
Various reports  
Makati, The Philippines
- Swedish Food Institute, Goteberg. Annual report, 1972/73 - Goteberg, Sweden
- Tasmanian Fisheries Development Authority. Annual report, 1st - ; 1977/78 -  
Hobart, Tasmania
- Tasmanian fisheries research, V.1 - ; 1967 -  
Hobart, Tasmania, Fisheries Industry Division, Tasmanian Fisheries Development Authority
- Tokai Regional Fisheries Research Laboratory. Bulletin, No. 87 - ; 1976 - Tokyo
- Torry Research Station, Aberdeen.  
Annual report, 1958 -  
Torry Advisory note, No. 1 -  
Torry memoir, No. 1 - (incomplete)  
Aberdeen, Torry Research Station
- United States. National Marine Fisheries Service  
Various publications. (Selected issues only held at Tas. Reg. Lab.)

APPENDIX V

Addresses for Gifts, Exchange and Report Literature

South Pacific Fisheries Commission  
Noumea  
New Caledonia

Department of Agriculture, Stock and  
Fisheries  
Port Moresby  
Papua New Guinea

Korea Institute of Science and  
Technology  
Seoul  
Korea

Joint Commission on Rural Reconstruction  
37 Nanhai Road  
Taipei  
Taiwan

Tokai Regional Fisheries Research  
Laboratory  
Kackidoki - 5  
Chuo-Ku  
Tokyo 104  
Japan

Department of Microbiology  
Lincoln College  
Canterbury  
New Zealand

Fishing Industry Board  
Box 9232  
Wellington  
New Zealand

Council of Australian Food Technology  
Associations  
44 Miller Street  
North Sydney  
N.S.W. 2060  
Australia

School of Food Sciences  
Hawkesbury Agricultural College  
Richmond  
N.S.W. 2753  
Australia

Tasmanian Fisheries Development Authority  
23 Old Wharf  
Hobart  
Tasmania 7000  
Australia

CSIRO Division of Food Research  
PO Box 52  
North Ryde  
N.S.W. 2113  
Australia

The Gifts and Exchange Librarian  
CSIRO  
Central Library  
PO Box 89  
East Melbourne  
Victoria 3002  
Australia

Department of Fisheries and Fauna  
108 Adelaide Terrace  
Perth  
Western Australia 6000  
Australia

Fisheries Branch  
Fisheries House  
GPO Box 30  
Sydney  
N.S.W. 2001  
Australia

Fisheries and Wildlife Division  
632 Bourke Street  
Melbourne  
Victoria 3000  
Australia

Australian Government Publishing Service  
PO Box 84  
Canberra  
A.C.T. 2601  
Australia

The Editor  
Australian Fisheries  
Department of Primary Industry  
Canberra  
A.C.T. 2600  
Australia

Fishing Industry Research Institute  
Private Bag  
Rondesbosch 7700  
Cape Province  
Republic of South Africa

White Fish Authority  
Sea Fisheries House  
10 Young Street  
Edinburgh, EH2 4JQ  
Scotland

World Health Organization  
20, Avenue Appia  
CH-1211 Geneva 27  
Switzerland

Organization for Economic Co-operation  
and Development  
2 Rue Andre-Pascal  
Paris 16E  
France

The Library  
Fiskeridirektoratet  
Postboks 185  
5001 Bergen  
Norway

Publications, Publicity and Public  
Relations Section  
Tropical Products Institute  
56-62 Gray's Inn Road  
London WC 1X 8LU  
England

British Food Manufacturing Industries  
Research Association  
Randalls Road  
Leatherhead  
Surrey  
England

Torry Research Station  
PO Box 31  
135 Abbey Road  
Aberdeen, AB 9 8DG  
Scotland

Communications Division  
International Development Research Centre  
PO Box 8500  
Ottawa, K1g 3H9  
Canada

Scientific Information and Publications  
Branch  
Ottawa, K1A 0E6  
Canada

University of Rhode Island  
Kingston  
Rhode Island 02881  
USA

Technical Information Service  
US Department of Agriculture  
Beltsville Md., 20705  
USA

Sea Grant Program  
University of Washington  
Seattle  
Washington 98105  
USA

Sea Grant College  
Texas A & M University College Station  
Texas 77843  
USA

Marine Technical Information Center  
California Department of Fish and Game  
350 Golden Shore  
Long Beach  
California 90802  
USA

Scientific Publications Office  
National Marine Fisheries Service  
NOAA  
Room 450  
1107 N.E. 45th Street  
Seattle WA, 98105  
USA

Sea Grant Program  
Virginia Polytechnic Institute and  
State University  
Blackburg  
Virginia 24061  
USA

Superintendent of Documents  
US Government Printing Office  
Washington, D.C., 20402  
USA

Northwest Fisheries Center  
NMFS, NOAA  
2725 Mortlake Boulevard East,  
Seattle, WA, 98112  
USA

International Commission for Northwest  
Atlantic Fisheries  
PO Box 638  
Dartmouth. NS.  
B2Y 3Y9  
Canada

The Fisheries Librarian  
FAO  
Via delle Terme di Caracalla  
00100 Rome  
Italy

Ministry of Natural Resources  
Visayas Avenue  
Diliman  
Quezon City  
Metro, Manila  
The Philippines

South China Sea Fisheries Development  
and Coordinating Programme  
Don Tim Building  
5468 South Superhighway  
Makati  
Metro, Manila

International Centre for Living Aquatic  
Resources Management (ICLARM)  
MCC PO Box 1501  
Makati  
Metro, Manila  
The Philippines

Scientific Library and Documentation  
Division  
National Science Development Board  
Bicutan, Taguig  
Metro, Manila  
The Philippines

Southeast Asian Fisheries Development  
Centre (SEAFDEC)  
Changi Fisheries Complex  
Changi Point  
Singapore 1749

MARDI (Malaysian Agricultural Research  
and Development Institute)  
Agricultural Products Utilization Division  
Serdang, Selangor  
Malaysia

University of Agriculture  
Department of Food Science and Technology  
Serdang, Selangor  
Malaysia

Fishery Technology Development Division  
Department of Fisheries  
Rajadamnern Avenue  
Bangkok  
Thailand

Department for Fishery Products  
Faculty of Fisheries  
Kasetsart University  
Bangkok 9  
Thailand

Institute of Food Research and Product  
Development  
Kasetsart University  
Bangkok 9  
Thailand

Southeast Asian Fisheries Development  
Centre  
PO Box No. 4  
Phrapradaeng  
Samutprakarn  
Thailand

Department of Fisheries Technology  
College of Fisheries  
University of the Philippines  
Diliman, Quezon City, 3004  
The Philippines

Bureau of Fisheries and Aquatic Resources  
(BFAR)  
860 Quezon Avenue  
Quezon City  
Metro, Manila  
The Philippines

Department of Food Science and Technology  
College of Agriculture  
University of the Philippines at Los Banos  
College  
Laguna  
The Philippines

Institute of Fishery Technology  
Jalan Karel S. Tubun  
PO Box 30 Palmerah  
Jakarta, Indonesia

Institute of Fish Technology  
PO Box 1505  
(c/o UNDP Office)  
Colombo  
Sri Lanka

Australian Maritime College  
PO Box 986  
Launceston  
Tasmania, 7250  
Australia



